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09/831,503	09/21/2001	Anuj Aggarwal	24320	5346

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EXAMINER

BOYD, JENNIFER A

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 01/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/831,503

Applicant(s)

AGGARWAL ET AL.

Examiner

Jennifer A Boyd

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Response to Amendment

1. The Applicant's Amendments and Accompanying Remarks, filed September 10, 2003, have been entered and have been carefully considered. Claims 1 – 13 are amended, claims 14 – 21 are added and claims 1 – 21 are pending. In view of Applicant's Amendments, the Examiner withdraws the objection of claims 1 – 13 as set forth in paragraphs 1 – 2 and the 35 U.S.C. 112, second paragraph, rejection of claims 1 – 13 as set forth in paragraphs 3 – 9 of the last Office Action dated May 7, 2003. In view of Applicant's Arguments, the Examiner withdraws the 35 U.S.C. 103 (a) rejection of claims 1 and 11 as being unpatentable over Macda al. (US 4,957,797) and Doerfling et al. (US 3,935,353) in view of Blum et al. (US 4,581,432) as set forth in paragraph 12 of the previous Office Action dated May 7, 2003. In view of Applicant's Arguments, the Examiner withdraws the 35 U.S.C. 103(a) rejection of claims 1 – 10 and 12 – 13 as being unpatentable over Rozek et al. (US 6,204,209) in view of Doerfling et al. (US 3,935,353) to reflect the proper orientation of the laminate as set forth in paragraph 11 of the previous Office Action dated May 7, 2003. However, after an updated search, the invention as currently claimed is not found to be patentable for reasons herein below.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3 - 4, 8 - 9 and 12 - 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Romesberg et al. (US 5,582,906).

Romesberg is directed to a laminated headliner (Title).

As to claims 1 and 12 - 13, Romesberg teaches a headliner as shown in Figure 2.

Romesberg teaches a *decorative cover layer 52* comprising a woven fabric with a permeable vinyl coating (column 5, lines 53 - 59); the Examiner equates this decorative cover layer to Applicant's "decorative layer (6)". Romesberg teaches a *second layer of thermoplastic film or web adhesive 46* which is identical in physical and chemical composition to *film 24* (column 5, lines 5 - 10). Romesberg teaches that the *film 24* prevents bleed through of the liquid adhesive resin (column 4, lines 20 - 25); therefore, if a *second layer of thermoplastic film or web adhesive 46* has the same composition as *film 24*, then it will also prevent bleeding through. The Examiner equates this layer to Applicant's "semi-permeable and migration-resistant barrier layer (8)".

Romesberg teaches a *second layer of fiber glass mat 41* adjacent to the previous layer (column 3, lines 4 - 6 and column 4, lines 65 - 69) which the Examiner equates to Applicant's "air-permeable second reinforcement layer (5)". Romesberg teaches an open celled foam layer adjacent to the fiber glass mat (column 2, lines 3 - 65 and column 4, lines 63 - 65) which the Examiner equates to Applicant's "air-permeable support (3)". Romesberg teaches a *first fiber glass mat 37* (column 4, lines 45 - 50) equated to Applicant's "air-permeable first reinforcement

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layer (4)". Romesberg teaches a *non-porous film* 24 (column 4, lines 20 - 25) equated to Applicant's "air-impermeable back layer (9)". Romesberg teaches that resin and film layers are used to adhere the layers of the laminate (column 4, lines 15 - 45). Romesberg teaches delivering the layers of the laminate over a pair of rollers, impregnating the foam layer with resin in a bath, applying the fiber glass layers and cutting and compressing the laminated with heated molds (column 4, lines 1 - 65 and column 5, lines 45 - 69).

As to claims 3 and 16, Romesberg teaches that the open celled foam layer, or "air-permeable support (3)", can comprise polyurethane (column 7, lines 1 - 15).

As to claims 4, 15 and 17, Romesberg teaches that the "air-permeable first reinforcement layer (4)" and "air-permeable second reinforcement layer (5)" are fiber glass mat 37 (column 4, lines 45 - 50) and fiber glass mat 41 (column 3, lines 4 - 6 and column 4, lines 65 - 69).

As to claim 8, Romesberg teaches that teaches that the *film* 24, or "semi-permeable and migration-resistant layer (8)", prevents bleed through of the liquid adhesive resin (column 4, lines 20 - 25).

As to claim 9, Romesberg teaches that the *film* 24, or "semi-permeable and migration-resistant layer (8)", can be an ethylene-acrylic acid copolymer sold by Dow Chemical under the trade designation DAF 899 (column 4, lines 15 - 20). According to Finlayson (US 4,975,138), DAF 899 has a thickness of 0.3 mm (Finlayson, column 4, lines 15 - 35).

As to claim 14, Romesberg teaches that the decorative cover layer 52, or "air-permeable decorative layer (6)" has a layer of vinyl which adheres the decorative cover layer to the rest of the laminate (column 5, lines 54 - 60).

As to claim 18, Romesberg teaches the application of adhesive via the resin source 18 (column 4, lines 10 – 15). As seen in Figure 1, the resin source feeds to spraying mechanisms above the assembly line.

Claim Rejections - 35 USC § 102/103

4. Claims 2 and 19 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Romesberg et al. (US 5,582,906)

Although Romesberg does not explicitly teach the claimed layers on the passenger compartment side has an air flow resistance of $500\text{Nsm}^{-3} < R1 < 2500\text{Nsm}^{-3}$ as required by claim 2 and $900\text{Nsm}^{-3} < R1 < 1900\text{sm}^{-3}$ as required by claim 19, it is reasonable to presume that that passenger compartment side has an air flow resistance of $500\text{Nsm}^{-3} < R1 < 2500\text{Nsm}^{-3}$ and $900\text{Nsm}^{-3} < R1 < 1900\text{sm}^{-3}$ is inherent to Romesberg. Support for said presumption is found in the use of like materials (i.e. a laminate comprising a decorative cover sheet, reinforcing layer, a rigid foam layer, a second reinforcing layer, a fibrous batt and a third reinforcing layer) which would result in the claimed property. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed property of the passenger compartment side has an air flow resistance of $500\text{Nsm}^{-3} < R1 < 2500\text{Nsm}^{-3}$ and $900\text{Nsm}^{-3} < R1 < 1900\text{sm}^{-3}$ would obviously have been present once the Romesberg product is provided. Note *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977).

Claim Rejections - 35 USC § 103

5. Claims 1, 5 – 8, 10 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rozek et al. (US 6,204,209) in view of Doerfling et al. (US 3,935,353) and Sandoe et al. (US 2001/0036788 A1).

Rozek is directed to a laminated article suitable for use as decorative sound absorbing panels for automotive applications and are well suited for use as vehicle headliners (Abstract).

As to claim 1, Rozek teaches a laminate comprising a decorative cover sheet 22 adjacent to a reinforcing layer 20 adjacent to a rigid foam layer 14 adjacent to a second reinforcing layer 18 adjacent to a fibrous batt 12 adjacent to a third reinforcing layer 16 adjacent to a release layer 24. The decorative cover sheet 22, equated to Applicant's "air-permeable decorative layer (6)", can be porous fabric material (column 6, lines 11 – 15). The reinforcing layer 20 is equated to Applicant's "semi-permeable and migration resistant barrier layer (8)". The rigid foam layer 14, equated to Applicant's "air-permeable second reinforcement layer (5)", is sufficiently porous so that one can gently blow air at one side of the layer and feel the air coming through on the other side (column 7, lines 18 – 20). The second reinforcing layer 18, equated to Applicant's "air-permeable support layer (3)", is porous to a sufficient degree so it does not act as a sound reflector (column 4, lines 30 – 35). The fibrous batt 12, equated to Applicant's "air-permeable first reinforcement layer (4)", is needled (column 3, lines 15 – 20) which would result in a permeable structure. The layers of the laminate are bonded together using a resin binder, equated to Applicant's "air-permeable adhesive (7)", which is provided in an amount that does not interfere excessively with the porosity of the laminate (column 5, lines 1 – 7).

As to claims 5 - 6, Rozek teaches that the reinforcing layer 20, or "semi-permeable and migration resistant barrier layer (8)", can be a blend of natural fibers and thermoplastic fibers

(column 5, lines 60 – 65). Rozek suggests that the thermoplastic fiber can be polyester (column 5, lines 25 – 60) and the natural fiber can be selected from sisal, abaca and coconut fibers, which are known to be cellulosic fibers.

As to claim 10, Rozek teaches that the adhesive (7) is an elastomeric composition comprising 100 parts by weight of a polyol having three or four hydroxyl groups, 85 parts by weight of an isocyanate compound having at least 2 reactive isocyanate groups, such as methylene-bis-phenyl isocyanate, 0.05 to 0.10 parts of a catalyst such as tin octoate or lead naphthanate, and 5 to 20 parts of solvent such as trichlorofluoromethane or methylene chloride (column 5, lines 13 – 20). Wenning (US 5,874,173) teaches that two-pack polyurethane adhesives are essentially characterized by polyisocyanates as hardeners and by predominately oligomeric diols and/or polyols as resin. Therefore, the adhesive of Rozek can be considered to be a two-pack polyurethane adhesive.

As to claim 1 and 7 – 8, Rozek fails to teach that the reinforcing layer 20, or “semi-permeable and migration resistant barrier layer (8)”, is a migration-resistant barrier layer as required by claim 1. Rozek fails to teach that the surface of the barrier layer is treated or wetted so that it can enter into adhesion with the adhesive 7. Rozek fails to teach that the fibrous batt 12, or “semi-permeable and migration-resistant barrier layer (8)”, is migration-resistant to softeners, decomposition products used by ageing and/or additives from the polyurethane foam layer or the adhesive films as required by claims 8.

Doerfling is directed to a decorative covering material for enhancing the exterior appearance of a vehicle panel (Abstract). Doerfling teaches the use of a barrier coating or film to

applied on a fabric to prevent or inhibit undesired migration of constituents to and from the adhesive film to the exterior surface of a facing sheet which may produce a discoloration or other surface imperfection therein. The barrier coating may also serve as a so-called tie coat for enhancing the strength of the initial or final bond of the adhesive coating to the underside of the facing sheet (column 4, lines 10 – 23).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to treat the reinforcing layer 20, or “semi-permeable and migration resistant barrier layer (8)”, in the laminate of Rozek with the barrier coating or film of Doerfling to create a migration-resistant barrier layer motivated by the desire to enhance the strength of the adhesive bond while minimizing discolorations and surface imperfections.

As to claim 1, Rozek in view of Doerfling fails to teach Applicant’s “air-impermeable back layer (9)” on the vehicle roof side.

Sandoe et al. (US 2001/0036788 A1) is directed to a vehicle headliner and laminate (Title). Sandoe teaches that vehicle headliners on the interior of the automobile are a decorative panel which separates the passenger compartment from the sheet metal forming the roof of the vehicle (page 1, [0005]). The Examiner equates the inherently air-impermeable sheet metal roof to Applicant’s “air-impermeable back layer (9)”.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to consider the sheet metal roof of Sandoe to be the final layer, or “air-impermeable back layer (9), of Rozek in view of Doerfling motivated by the desire to employ the laminate of Rozek in view of Doerfling in a final product such as a lined roof.

As to claims 5 and 20, Rozek fails to teach that the fabric weighs approximately 20 to 60 g/m² as required by claim 5 or approximately 45 g/m² as required by claim 20. It should be noted that the fabric weight is a result effective variable; for example, as the weight increases, the fabric becomes heavier and more rigid. It would have been obvious to one having ordinary skill in the art at the time the invention was made to create a mixed fiber fabric with a fabric weight of approximately 20 to 60 g/m² as required by claim 5 or approximately 45 g/m² as required by claim 20, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In the present invention, one would have been motivated to optimize the fabric weight to create a suitably flexible and strong fabric for use in a laminate.

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Romesberg et al. (US 5,582,906) as set forth above taken in view of Blum et al. (US 4,581,432).

Romesberg discloses that the decorative cover sheet 22, equated to Applicant's "air-permeable decorative layer (6)", can be porous fabric material (column 6, lines 11 – 15) but fails to disclose that the decorative cover sheet is a polyethylene nonwoven.

Blum et al. teaches molded parts useful for headliners (column 16, lines 30 – 35) comprising a decorative material (column 16, lines 14 – 15). The decorative material can be a non-woven material comprising polyethylene (column 16, lines 15 – 23).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to create the decorative layer of Maeda in view of Doerfling from a polyethylene nonwoven

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fabric as suggested by Blum motivated by the expectation that polyethylene is high in strength and highly resistant to environmental insults such as mildew.

7. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Romesberg et al. (US 5,582,906).

Romesberg fails to teach that the “semi-permeable and migration-resistant barrier layer” has a thickness of 0.285 mm. It should be noted that the thickness is a result effective variable; for example, as the thickness increases, the fabric becomes heavier and more rigid. It would have been obvious to one having ordinary skill in the art at the time the invention was made to create the “semi-permeable and migration-resistant barrier layer” with a thickness of 0.285 mm, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In the present invention, one would have been motivated to optimize the thickness to create a suitably flexible and strong fabric for use in a laminate.

Response to Arguments

8. Applicant's arguments with respect to claims 1 - 13 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A Boyd whose telephone number is 703-305-7082. The examiner can normally be reached on Monday thru Friday (8:30am - 6:00pm).


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 703-308-2414. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


Jennifer Boyd
December 11, 2003


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